Southwest Strategy

Southwest Community Wildfire Protection Plan Guide

The Southwest Strategy (SWS) is a community development and natural resources conservation and management effort by Federal, state, tribal and local governments. Through this effort the partners work in collaboration with each other and the public to restore and maintain the cultural, economic and environmental quality of life in the states of Arizona and New Mexico.

SWS mission is to: ***"Facilitate collaborative, scientifically-based approaches to enhance community vitality and resolve resource conservation and management issues in the Southwest."***

Partners include the States of Arizona and New Mexico, Southwest Tribal Governments, USDA Forest Service, Natural Resources Conservation Service, Rural Development, Bureau of Indian Affairs, Bureau of Land Management, Bureau of Reclamation, U.S. Fish and Wildlife Service, National Park Service, U.S. Geological Survey, Department of Defense (Regional Environmental Coordination), U.S. Environmental Protection Agency, and the U.S. Border Patrol. Visit the Web site at: *http://www.swstrategy.org/*

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Introduction, "It Starts With a Relationship"

This guide is designed to assist communities in Arizona and New Mexico in developing a Community Wildfire Protection Plan (CWPP) in wildland-urban interface (WUI) areas at risk from wildfires. A CWPP is a prerequisite for Federally funded programs for local projects. It can be used by Firewise[1] working groups, individual homeowners, fire departments, fire management personnel in natural resource agencies and others involved in wildfire planning and mitigation efforts. A companion handbook, "Preparing a Community Wildfire Protection Plan[2]" was recently prepared by several national organizations to assist communities in developing a CWPP which must be prepared in order for Federal agencies to consider the local community priorities as the agencies develop and implement forest management and hazardous fuels projects.

Building good community partnerships is a major focus of this guide. Although this product is not a comprehensive manual, it serves as a tool to develop a coordinated community effort. Collaboration among community stakeholders is necessary while developing appropriate fire protection goals to accomplish key tasks in a timely manner with limited funds.

Experience has shown that addressing local WUI concerns requires a community grass roots effort. In supporting the community advocates, agencies should provide leadership and guidance on ecosystem health, fire preparedness, fuels reduction and public awareness.

Eight steps are presented to assist communities in preparing a wildfire protection plan and continue with two community case studies in the Southwest Area—one each from Arizona and New Mexico—that have already developed strong management plans that can be used as a basis to develop a CWPP. The communities took different actions to complete their plans and provide protection from wildfire.

The three major components to address when building a CWPP are hazardous fuels reduction, public awareness, and protection capability (see Figure 1). A community which focuses on these when getting community programs applied on the ground should have success reducing the risk from wildfire damages. As each community develops its protection plan, it will prioritize the various aspects of each component, so these items should not be looked at rigidly, but rather as guidelines to achieving community goals. Potential funding sources are included later in this document.

The *minimum requirements* for a CWPP as described in the Healthy Forest Restoration Act (HFRA) are:

[1] *Firewise - A public education program developed by the National Wildland Fire Coordinating Group, administered by the New Mexico and Arizona State Foresters, that assists communities located in proximity to fire-prone lands. Firewise offers practical steps individuals and communities can take to help minimize the risks and damage or destruction from a wildfire. For additional information visit the Web site at:* www.Firewise.org

[2] *"Preparing a Community Wildfire Protection Plan," March 2004, Sponsored by: Communities Committee (CC), Society of American Foresters (SAF), National Association of Counties (NAC), National Association of State Foresters (NASF) and Western Governors' Association (WGA). The document can be found at:* http://www.safnet.org/policyandpress/cwpp.cfm

[3] *Ignitability - Home Ignitibility - the home construction materials, adjacent vegetation and other flammable materials generally within 100 feet of the home.*

Collaboration – A CWPP must be collaboratively developed by local and state government representatives, in consultation with Federal agencies and other interested parties; *Prioritized Fuel Reduction* – A CWPP must identify and prioritize areas for hazardous fuel reduction treatments and recommend the types and methods for treatment that will protect one or more at-risk communities and essential infrastructure; and *Treatment of Structural Ignitability*[3] — A CWPP must recommend measures that homeowners and communities can take to reduce the ignitability of structures throughout the area addressed by the plan.

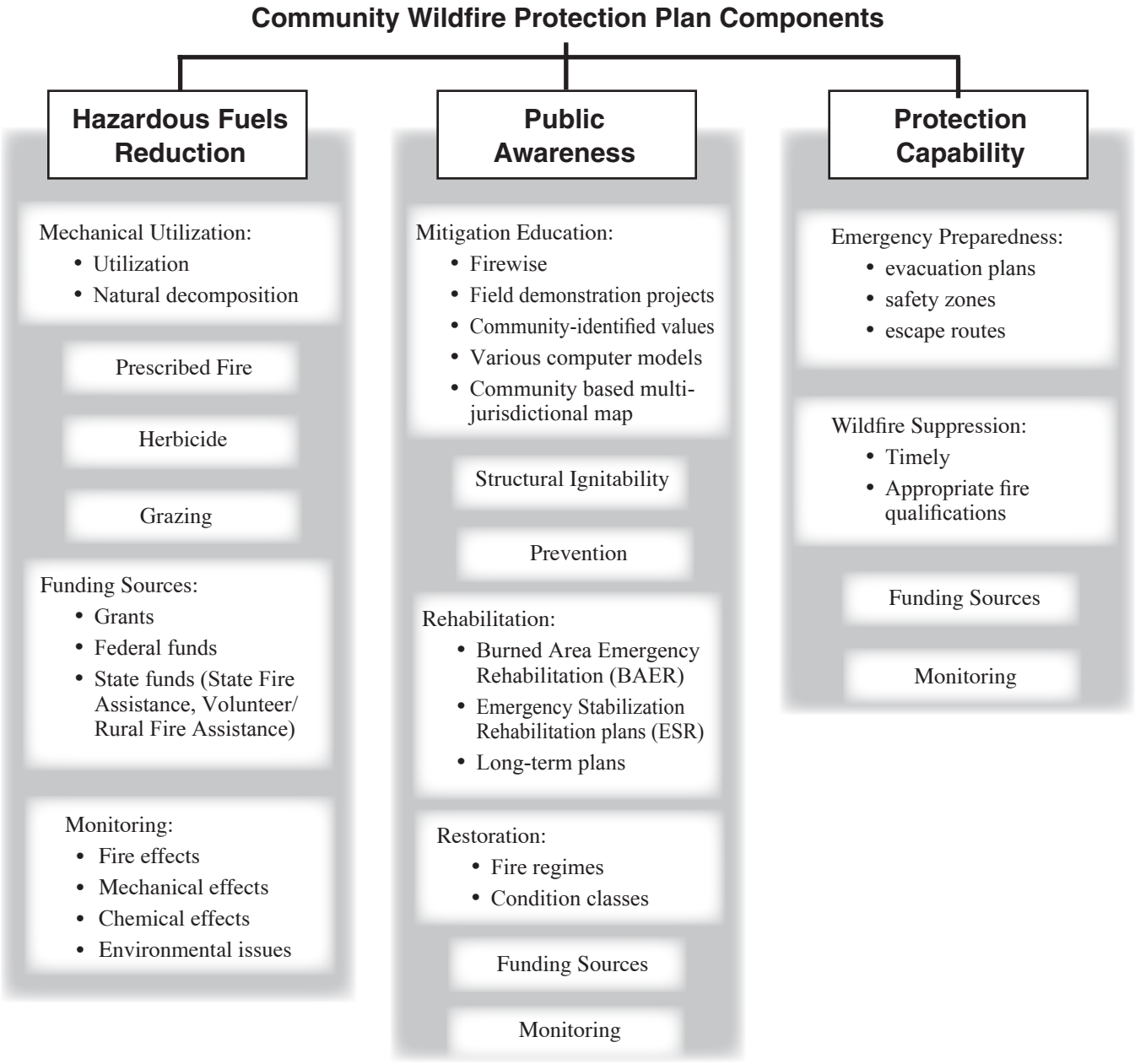

Figure 1. Components of a Community Wildfire Protection Plan

Eight Steps in Developing a Community Wildfire Protection Plan

These steps are to help communities develop a wildfire protection plan that addresses eight core elements. The minimum items required for Federal funding under the Healthy Forest Restoration Act (HFRA) are addressed, as are additional issues that often are incorporated into wildfire protection planning.

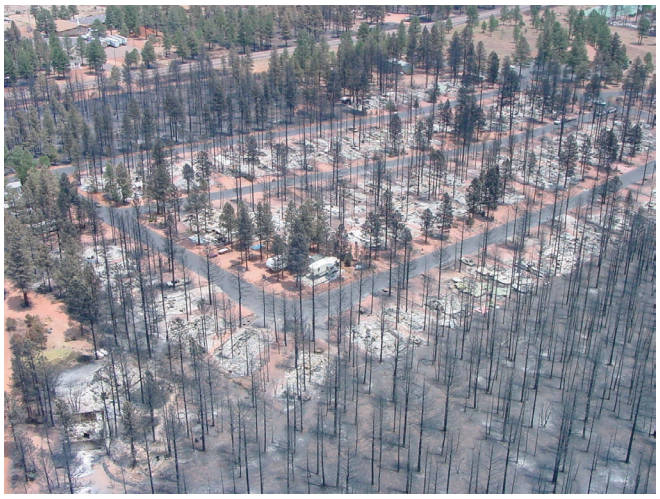

Figure 2. Overgaard, Arizona, after the Rodeo/Chedeski Fire, August 2002.

Figure 3. A home in Summerhaven, Arizona, after the Aspen Fire in June 2003.

Community wildfire planning need not be a complex process. A community can use this outline to develop a CWPP that is as extensive or as basic as is appropriate and desired by the community. A key element should be the meaningful discussion it promotes among community members regarding their priorities for local fire protection and forest management.

The first three steps focus on establishing a local working team. These steps are closely intertwined and may be performed concurrently—form a core leadership team, involve Federal agencies and engage interested parties.

Step One:
Form a core leadership team

A core leadership team for the community will focus its efforts on developing the CWPP's foundation. The team may include local elected leaders, fire chiefs, tribal governments, cooperative extension services, planning and emergency services departments and either the Arizona State Land Department (ASLD) or New Mexico Forestry Division. The three main entities that need to be part of the team, as described in HFRA, are local government, local fire authorities and the state agency responsible for forest management.

Step Two: Involve Federal agencies

For CWPP development, the team also needs to seek involvement from applicable Federal land managers, i.e., Bureau of Indian Affairs (BIA), Bureau of Land Management (BLM), Natural Resources Conservation Service (NRCS), USDA Forest Service (FS) and U.S. Fish and Wildlife Service (USFWS), particularly mitigation, prevention and WUI specialists. Federal agencies may provide support that is unavailable at the local level.

Step Three:
Engage interested parties

To be successful, the team needs to encourage active involvement from other organizations and stakeholders, such as developers, neighborhood associations, conservation groups and/or other organizations active in the community (nonelected leaders). Creating local partnerships and engaging the community in the planning effort will facilitate development of a plan that is accepted and that will invite involvement by the community. As involvement and ownership in the CWPP grow, additional individuals and groups will want to join the local working team.

As the foundation is set for the local working team, developing a CWPP can begin.

Step Four: Establish a community base map

The team's first objective is to prepare a community base map using and accessing technical advice from Geographic Information System (GIS), fuels and other natural resource specialists. County planning departments, local government and Federal agencies may have GIS information that can be useful for planning efforts. The map, the most important part of the CWPP, will define the WUI for the community, which will include all inhabited areas at risk, wildland areas (forests, grasslands, etc.) that contain critical human infrastructures, and areas at risk from large-scale fire disturbance. The community base map will provide a visual reference for the working team and the community to identify priorities.

Figure 4. The Audubon Headquarters after the Ryan Fire, April 2002, in Elgin, Arizona.

Figure 5. Evaluating access for emergency vehicles and evacuation routes is an important part of analyzing risk.

Step Five: Develop a community risk assessment

Using the map, the team will develop a community risk assessment that considers fuel hazards; risk of wildfire occurrence; homes, businesses and essential infrastructure at risk[4]; community social characteristics that may increase wildfire vulnerability; other community values at risk; and local preparedness and firefighting capability. Areas of concern will be displayed so potential project areas can be determined. The assessment should also identify positive actions, if any,

[4] values at risk = e.g., but not limited to: watersheds for clean water, stable soils, wildlife habitat, natural aesthetics, recreation opportunities, economic capital, protecting vegetation in healthy condition, privacy, protecting community infrastructure, health, human life, livestock in rural areas, financial assets and seclusion (i.e., narrow roads).

Figure 6. Creating defensible space is an important part of the CWPP process.

Figure 7. Some homes built have survived fires due to the defensible space created around them, even when fuels exist below them.

that have already been implemented by residents.

Step Six: Establish community priorities and recommendations

Collaborative meetings will be held to evaluate the map and community risk assessments. These meetings should identify community project priorities and preferred methods for hazardous fuels treatments, reducing structure ignitability through fire awareness programs, and improving fire response capability. In the CWPP, communities can decide to protect some community values through direct community outreach actions (e.g., Citizen Watch, mowing, fuel pickup, pruning or grazing). Overall, projects that protect communities and essential infrastructures are the key components of the CWPP. Projects should be prioritized by whether they mitigate wildfire risks based upon commonly held values at risk.

Step Seven: Develop an action plan and assessment strategy

Before finalizing the CWPP, the local working team should develop an action plan that identifies roles and responsibilities, funding needs and includes a timeline for carrying out priority projects.

An assessment strategy should be established to ensure monitoring of the plan and to contribute to its long-term success.

Step eight: Finalize the Community Wildfire Protection Plan

The plan should include a list of active Firewise groups, key WUI specialists, grant writers, contractors and other key leaders and partners so a clear network of interested individuals can coordinate wildfire protection efforts. To meet HFRA requirements, the final contents of the plan need to be mutually agreed upon by the three main entities identified in Step One—local government, local fire authorities and the state agency responsible for forest management. The plan should be user-friendly for community leaders and homeowners alike.

Wildfire Suppression

Fires happen. Emergency preparedness (e.g., evacuation plans, safety zones, escape routes) will be tested and communities must respond. This segment focuses on how Southwest firefighting agencies respond to wildfires.

When fire threatens a community, initial attack firefighting resources may be overwhelmed. Local fire departments seldom have adequate resources to combat a large wildfire; this is where the CWPP is "field tested." Local initial attack forces should contact their interagency partners for assistance.

Whenever possible, fires are handled within the local zone. As the fire grows and potential increases beyond local zone capability, the Southwest Coordination Center, located in Albuquerque provides additional support (see the Southwest Area Zone map at the end of this document). Additional firefighting resources such as airtankers, heavy helicopters and interagency hotshot crews are available on an as-needed basis. These resources are pre-positioned and moved around as fire season dictates.

In times of high fire activity, specialized fire resources may be at a premium. Therefore, a national coordination system was designed to deal with a busy fire season. Resources will eventually make it to the community, but the process takes time. It may take 12 to 36 hours to get the needed resources in place to fight a large fire. It has proven successful for communities to test their CWPP and practice mobilizing responses locally.

Implementing the Community Wildfire Protection Plan

Example of a Basic Community Wildfire Protection Plan Outline[5]

1. Executive summary
2. Introduction
3. What is fire safety? How to be ready when fire comes
4. Community description
5. Current fire environment
6. Risk assessment —identifying and evaluating assets at risk
7. Mitigation strategy, the action plan
8. Summary and conclusions
9. Appendices

[5] *Basic Community Wildfire Protection Plan Outline – developed by the California Fire Plan Workgroup in conjunction with the Western Governors Association (WGA). Visit* www.firesafenetwork.org *and* www.cafirealliance.org

When the planning process has been completed and the funding is secured, it is time to implement the plan. There are three basic avenues in project implementation.

The first avenue is to utilize existing local resources as well as state and Federal agencies. Most state and Federal land management agencies possess an excellent pool of talented individuals and necessary equipment. The common roadblock for utilizing local resources is lack of time. With few exceptions, most local, state and Federal resources cannot commit the amount of time necessary to implement WUI projects.

The second avenue involves adding to the existing community workforce by hiring and training new employees. Hiring new employees is time consuming, generally causes a temporary decrease in production, and cuts into funding set aside for on-the-ground work. However, this method may be a good option for areas with a surplus of available manpower, i.e., seasonal firefighters and areas which anticipate future WUI projects locally.

The third avenue is soliciting a contractor. The benefits of hiring a contractor include avoiding overhead costs and long-term investments associated with equipment and personnel, securing project-specific expertise, and meeting fiscal deadlines and outsourcing (see potential funding sources later in this document). The negatives *may* include a lack of ownership by the contractor, "cutting corners" for profit making and lump sum payments. Whenever possible, small businesses and local contractors should be utilized. It may be worth the time to develop local contractors into stakeholders.

A potential source for finding contractors in the Southwest is the Southwest Area Forest, Fire and Community Assistance Web site: *www.southwestareagrants.org*.

Case Study: Prescott, Arizona – People Coming Together

The city of Prescott is in Yavapai County in central Arizona between 5,000 and 7,000 feet in elevation in the Bradshaw Mountains. The community is surrounded by ponderosa pine, chaparral and grasslands. Prescott and the surrounding communities have frequently experienced WUI wildfires. Two thirds of the city of Prescott is bordered by national forest, and the other third is mixed ownership. Prescott has a population of 38,180 and has increased 10.1 percent since April 2000.

In 2000, the city of Prescott commissioned a risk assessment of the community. The report found that approximately 30,000 residents living on 8,329 acres in 14,000 structures with an assessed value of $1.7 billion are at extreme risk from wildland fire. In addition, the Ecological Restoration Institute of Northern Arizona University has rated Prescott as one of nine communities in the Southwest in grave danger of a catastrophic wildfire moving into the community.

Figure 8. Before and after photos (below) of hazardous fuels treatment in Acre Park located in Prescott, Arizona.

The most severe hazard facing the city of Prescott is the threat of wildfire. Local agencies, identifying this risk in 1990, put together a public-driven, agency-supported forum to deal with the issue. The driving force behind the interagency cooperation is the Prescott Area Wildland-Urban Interface Commission (PAWUIC). Established by resolution of the city of Prescott, Yavapai County, FS and ASLD in 1990, PAWUIC has provided the leadership and direction mitigating the wildfire problem. Volunteer residents provide for the oversight and direction with each agency providing the staffing and planning. PAWUIC is divided into subcommittees that oversee interagency operations, public relations, biomass utilization and economic development.

Among the accomplishments of PAWUIC and the Prescott Fire Department are:

1990 Development of the first interagency operating and evacuation plan.

1991 Prescott Fire Department (PFD) began red-carding all fire personnel.

• Began yearly interagency wildfire and evacuation drills.

• Began annual interagency engine and crew tactical and hose training.

• Began an intensive public education program on defensible space.

1991-2000 City of Prescott and the Prescott National Forest (PNF) continue work on addressing the WUI and began prescribed burns and mechanical thinning around the community.

2000 National Fire Plan was adopted.

2001 Applied for and was awarded a State Fire Assistance (SFA) grant to begin defensible space treatment on private property. PFD fuels crew creates defensible space around 392 homes.

• Began annual Wildfire Town Hall meetings.

• Began joint project planning with the Prescott National Forest for coordinated fuels treatment in extreme hazard areas.

2002 Continued with SFA grant and created defensible space around an additional 738 homes.

• The Indian Fire threatens the city; although five homes were lost, disaster was averted due to PNF fuels treatment, sound tactics and interagency cooperation.

• Prescott is the first city in Arizona to adopt a WUI fire code.

2003 PAWUIC establishes a Web site at *www.regionalinfo-alert.org*

• PFD establishes a hazardous tree removal program, removing 10,000 dead ponderosa pine trees through a joint effort with a private contractor. A fee of $55 per tree, paid for by the homeowners, covers the cost of the program.

• Defensible space treatment continues with 545 additional homes being treated.

• City of Prescott strengthens its WUI code.

2004 PFD establishes a Type 2 initial attack crew that will be available to fight wildland fires and conduct defensible space work.

Case Study: Village of Ruidoso, New Mexico – Protecting Their Community

The Village of Ruidoso is in Lincoln County in south central New Mexico. At 7,000 feet elevation in the Sacramento Mountains, Ruidoso is a typical mountain community in the Southwest. Dense stands of ponderosa pine and mixed conifer intermix with this growing, tourism-based community. The Lincoln National Forest and Mescalero Apache Reservation surround the village, along with other Federal and state lands. Ruidoso has a permanent population of 8,500 with more than 50 percent absentee landowners in an area encompassing 14,000 acres. In addition, Ruidoso has almost 800 acres of public land in the form of parks and green space.

In 1998, Ruidoso began to formally address forest health and wildfire hazard reduction challenges by purchasing a "grapple" truck and offering a forest debris pickup service. In 2000, the Village added a second grapple truck. In 2003, two additional grapple trucks were purchased as demand for services increased. The Village contracts with Sierra Contracting Inc., a local composting enterprise, and recycles 100 percent of removed forest debris (more than 40,000 cubic yards per year).

In 2000, to further address forest health and wildfire issues, the Village hired a professional forester to develop and implement a "Community Forest Management Plan" (CFMP). In June 2002, the CFMP was completed addressing three components: fuels management, structural safeguards and infrastructure protection. A municipal forestry department was created in 2003.

Ordinances restricting tree cutting were relaxed and forestry lot assessments were offered. These assessments emphasized forest health and landscape opportunities as well as fire hazard reduction. In 2002, the Village Council enacted a suite of ordinances mandating fuels reduction on all lands within Ruidoso and a fire hazard rating standard for new construction with regard to building materials and site development. Recent revisions of the 2002 ordinances include protection of old and large trees, protection of root zones during site development and establishing guidelines for bark beetle habitat reduction. The objective of the CFMP is ground fire management. Concepts from the Firewise Communities USA program and research done on home ignition zones were combined to establish objective fuels management standards.

Figure 9. Grapple truck picking up homeowner debris.

Strong public awareness is essential to successful implementation. The

Village has a forestry Web site (*www.voruidoso.com)*, conducts Firewise workshops, runs TV "house makeover" spots on a local channel, and offers a community tool wagon for volunteer projects. Additionally, the Village has established wildfire evacuation routes and has a computer telephone system at police dispatch that can dial 500 numbers in 10 minutes delivering early warning messages for evacuation, etc.

Figure 10. Before (above) and after photos documenting defensible space treatments around a private home in Ruidoso, funded through New Mexico Forestry Division's "cost-share" program (State Fire Assistance).

With regard to public lands, the Village hosts and coordinates the Ruidoso Wildland-Urban Interface Group (RWUIG). This working group has met monthly since 2000 and includes Federal, state, tribal and local agencies and entities as well as a number of non-landholding participants. The group has prioritized projects in the southwest quadrant of the WUI. Their goals are to: establish crown fire mitigation measures within each agency's management objectives on public land; encourage a minimum of ground fire mitigation measures on private land; and target restoration and sustainable communities through economic development. To date, the RWUIG has treated more than 6,000 acres on public land using a mix of state and Federal funding. The Village and Lincoln County have treated almost 1,500 acres of private land using grant assistance through New Mexico Forestry Division's "cost-share" program (State Fire Assistance), which can assist communities in creating defensible space.

Implementation of the Village of Ruidoso's CFMP has promoted an increase in the number of forest contractors from 3 companies doing business in 2000 to more than 20 active companies in 2004. In addition, the Village has added four employees in the solid waste department (grapple truck drivers) and three employees in the forestry department. In 2003, the Village was recognized with a Firewise Communities USA award and a National USDA Forest Service Rural Communities Assistance Spirit award.

The overall effects of this community's efforts are: reduction of risk to wildfire; a greater awareness and understanding of natural resource challenges; an increase in forest ecosystem health; and a boost to local economy and employment. Currently, the Village of Ruidoso is developing its CWPP using the existing CFMP as a foundation for the plan.

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Acronyms

ASLD – Arizona State Land Department

BIA – Bureau of Indian Affairs, Department of the Interior

BLM – Bureau of Land Management, Department of the Interior

CC – Communities Committee

CWPP – Community Wildfire Protection Plan

EPA – Environmental Protection Agency

FEMA – Federal Emergency Management Agency

FS – Forest Service, Department of Agriculture

GIS – Geographic Information System

NAC – National Association of Counties

NASF – National Association of State Foresters

NFP – National Fire Plan

NRCS – Natural Resources Conservation Service

PAWUIC – Prescott Area Wildland-Urban Interface Commission

PFD – Prescott Fire Department

Plan – Community Wildfire Protection Plan

PNF – Prescott National Forest

RWUIG – Ruidoso Wildland-Urban Interface Group

SAF – Society of American Foresters

SFA – State Fire Assistance

SWS – Southwest Strategy

USDA – United States Department of Agriculture

USDI – United States Department of the Interior

USFWS – United States Fish and Wildlife Service, Department of the Interior

WGA – Western Governors Association

WUI – Wildland-Urban Interface

Funding Sources and Other Resources

Fire Planning, Fire Prevention and Education

FIREWISE — *www.firewise.org*

Arizona Interagency Wildfire Prevention Page — *www.azfireinfo.com/*

Arizona State Land Department Fire Management Division — *www.azstatefire.org*

Fire Prevention and Safety Grants through the U.S. Fire Administration — *www.usfa.fema.gov*

"Living with Fire – A Homeowners Guide" – 12 pages, one of the most detailed pieces of Firewise information for landowners — *www.or.blm.gov/nwfire/docs/livingwithfire.pdf*

Arizona Firewise Communities publications by the University of Arizona — *http://ag.arizona.edu/pubs/natresources/* (publications - AZ 1288, 1289, 1290, 1291, 1293, 1294, 1299 & 1302)

Fire Safe Council — *www.FireSafeCouncil.org*

Firewise Funding Sources — *http://www.firewise.org/usa/funding.htm*

FEMA — "At Home in the Woods - Lessons Learned in the Wildland-Urban Interface." This publication documents some of the best, most innovative fire mitigation practices currently underway in the wildland-urban interface. Facing the threat of wildfire, individuals and communities are taking creative measures to protect themselves. What follows are their stories, with a focus on challenges faced, obstacles overcome and lessons learned: *http://www.fema.gov/regions/viii/athome_woods.shtm*

Hazardous Fuel Reduction on Non-Federal Lands

State Fire Assistance (SFA) — *www.southwestareagrants.org*

Collaborative Forest Restoration Program (CFRP) —*www.fs.fed.us/r3/spf/cfrp* (treatment is not on private land, New Mexico only)

Landowner Assistance Programs — *www.southwestareagrants.org*

Assistance to Firefighters

Volunteer/Rural Fire Assistance (VFA/RFA) — *www.southwestareagrants.org*

Federal Excess Personal Property (FEPP) — *www.azstatefire.org* Arizona; *www.emnrd.state.nm.us/forestry/FIRE/federal_.htm* New Mexico

FEMA — *www.usfa.fema.gov/*

Firehouse.com – *www.firehouse.com/* (select Funding/Grants under NEWS)

Utilization of Biomass/Small Diameter Tree Utilization

(This includes utilization for chips, pellets, furniture, homes, signs, mulch, erosion control, fuel, heating, etc.). The following grant programs are for finding uses for small diameter material.

Southwest Forest Sustainable Partnership (SFSP) — *www.southwestareagrants.org*

Collaborative Forest Restoration Program (CFRP) — *www.fs.fed.us/r3/spf/cfrp/*

Southwestern Region Economic Action Program (EAP) — *www.fs.fed.us/r3/spf/coop/*

New Mexico Fuels for Schools — *http://www.emnrd.state.nm.us/forestry/* (being developed by New Mexico Forestry Division)

National Biodiesel Board — *www.biodiesel.org/*

National Renewable Energy Laboratory — *www.nrel.gov/*

Community Development

Office of Community Development — *www.rurdev.usda.gov/nm*

USDA Rural Development Economic Development Administration — *www.eda.gov*

Water Infrastructure

Water Infrastructure Finance Authority of Arizona — *http://www.azwifa.gov/*

U.S. Environmental Protection Agency — *http://yosemite.epa.gov/r9/fsfc.nsf/fundingsources*

New Mexico Rural Water Association — *http://www.nmrwa.org/funding.php*

EPA Funding for Small Communities Wastewater Systems — *http://www.epa.gov/owm/mab/smcomm/eparev.htm*

Business Development

New Mexico Small Business Development Programs — *www.nmsbc.org*

New Mexico Business Resource Center — *http://www.brc.nm.org*

USDA Rural Development — *www.rurdev.usda.gov/nm*

New Mexico Economic Development — *www.edd.state.nm.us/programs/*

New Mexico Community Development Loan Fund — *www.nmcdlf.org*

Arizona Small Business Association — *www.dist.maricopa.edu*

Rural Development Business Programs — *www.rurdev.usda.gov/rbs/*

USDA Rural Development – Rural Business and Rural Cooperatives — *www.rurdev.usda.gov/az/*

Arizona Department of Commerce Small Business Service — *www.commerce.state.az.us/smallbus/*

Arizona Department of Commerce – Business Development & Attraction — *www.commerce.state.az.us/BusAttraction/*

Other Community Wildfire Protection Plans

Greater Flagstaff Area — *http://www.gffp.org/docs/June_draft.htm*

At-Risk Communities of the Sitgreaves National Forest in Apache, Coconino and Navajo Counties — *http://www.sco.az.gov/fire/SitgreavesCWPP.pdf*

At-Risk Communities of the Apache National Forest in Apache County — *http://www.sco.az.gov/fire/ApacheCWPP.pdf*

New Mexico Communities at Risk Assessment Plan — *www.emnrd.state.nm.us/forestry/nmfireplan/main.cfm*

Josephine County, Oregon — *www.co.josephine.or.us/wildfire/index.htm*

Applegate Fire Plan — *www.grayback.com/applegate-valley/fireplan/index.asp*

Colorado Springs, Colorado — *http://csfd.springsgov.com/mitigationplan.htm*

Lower Mattole Fire Plan — *http://www.mattole.org/html/publications_publication_2.html*

Five (5) County Fire Plans for Southwest Colorado — *http://www.southwestcoloradofires.org/prevention/fireplans.htm*

State of Utah Community Fire Planning — *http://www.ffsl.utah.gov/CommunityFirePlan.doc*

Example of Community Map (Ruidoso NM) –

http://www.voruidoso.com/Forestry.html

Biomass Utilization in the Southwest

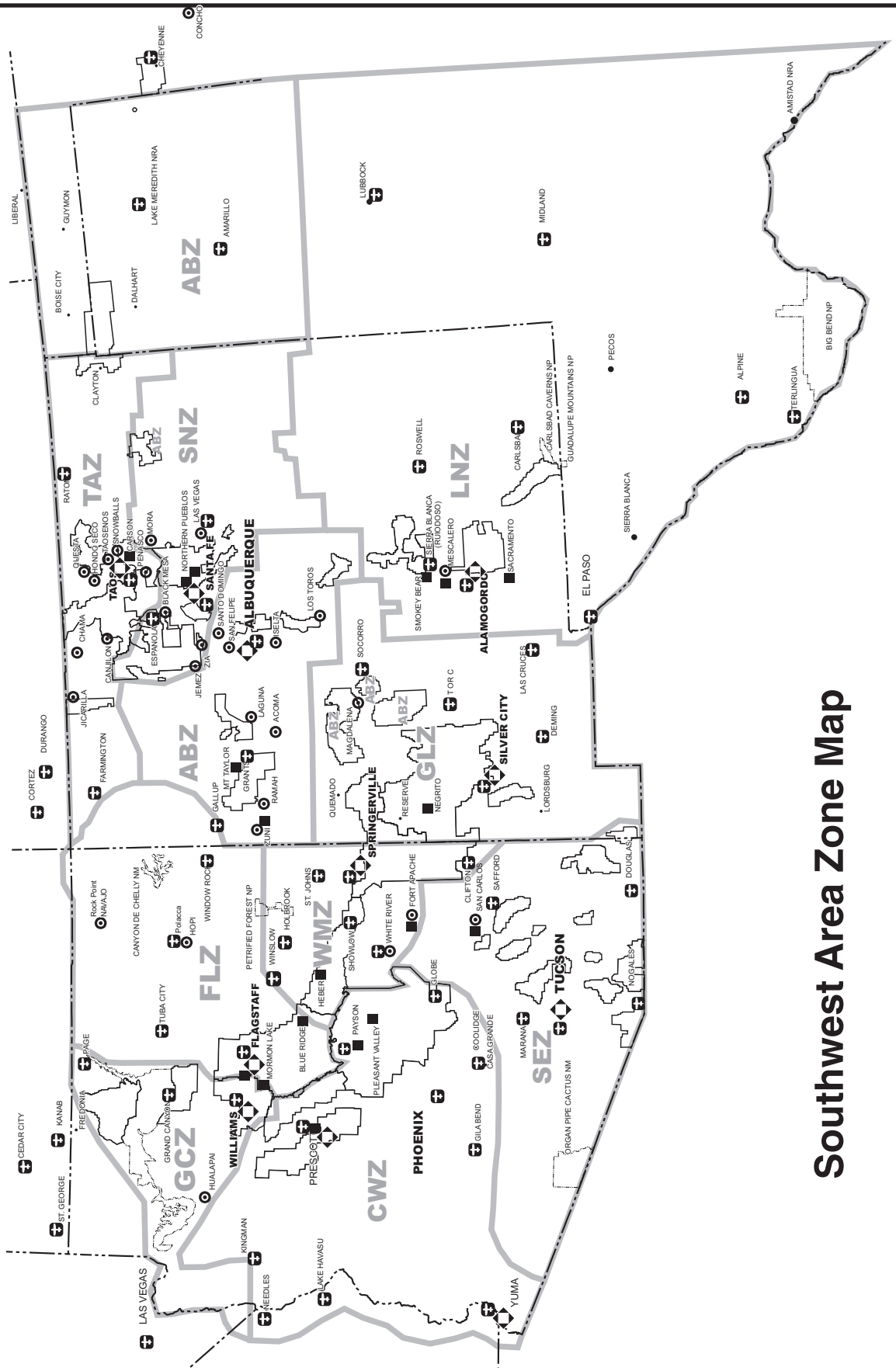
Existing or potential markets for biomass from hazardous fuels reduction projects

As communities implement forest restoration and other fuels reduction projects in the Southwest, thousands of tons of biomass will have to be processed. Biomass technology and marketing expertise are needed. A majority of the regional sawmill capacity has been lost in the past decade, leaving traditional methods for wood utilization very low. Communities need to guarantee annual volume through long-term contracts before industrial investment can be justified to handle large amounts of biomass from landscape-level restoration projects.

Small-scale, family-oriented businesses, cottage industry and large industrial operations can provide the following products to utilize biomass from fuels reduction projects.

List of products (not limited to the following):

- furniture
- erosion control products
- low-quality chips for packaging materials
- biomass electrical energy generator
- pulp, paper
- oriented strand board (OSB), fiberboard
- firewood
- peeled poles and vigas
- interlocking sidewalk kits from scraps of wood
- bone dry pellets from wood waste
- extruded composite signs made from finely ground juniper and plastic milk cartons
- animal bedding shavings
- garden compost, mulch
- oil spill absorbents (sawdust)
- cat litter, carpet cleaner, sludge additive
- custom cut timbers and beams
- lumber
- structural or panel wood from quality logs
- engineered wood products – floor joists, rafter and roof components, flooring and wall panels
- novelty items (bear carvings, yard art, etc.)
- biodiesel
- wood alcohol, ethanol, methanol
- extractives (Terpenes, vanilla)
- submerged fish habitat



Southwest Area Zone Map